

PROPOSED CONFIGURATION, UTILIZING  
MINIMIZED SPACING OF COMPONENTS

December 02, 2002



## HEADLINES

# US Army shares radios to avoid Gulf fratricide

KIM BURGER *JDW Staff Reporter*  
Washington, DC

**T**he US Army is widely distributing its premier tactical communications system – the Force XXI Battle Brigade and Below (FBCB2) system – to US ground units and allied forces to share information on the battlefield and help avoid fratricide in a war with Iraq, industry and army officials said.

The army's 4th Infantry Division (4th ID) is being deployed to the Persian Gulf region equipped with the full digital capability of the FBCB2 system and its Tactical Internet, including the tracking of friendly and enemy forces and tactical details about the battlefield. The army is providing more than 1,000 systems to additional units to enable other army, US Marine Corps (USMC) and allied units to interface with the advanced system and know each other's location.

The US Army has about 8,000 FBCB2 systems on hand. The US is delivering about 50 systems for use by a division-level unit of an unspecified coalition partner through a government-to-government agreement, officials said. Training is set to begin shortly. As the UK is the only US ally providing substantial ground combat forces, it is likely that the three UK brigades, particularly 7th Armoured Brigade, will receive the system.

The US 3rd Infantry Division and all other US army units that are likely to be involved in combat will receive the system, an army spokeswoman said. The USMC is buying a limited number of the FBCB2 systems, primarily to enable the army to be able to identify the marines, a programme official said. The USMC's Data Automated Communications Terminals can identify USMC and army units, the official added.

Friendly-fire incidents were responsible for 24% of US casualties in the 1991 Operation 'Desert Storm', as well as most of UK ground casualties in the 1990-91

conflict. Of the US fratricide incidents, 61% involved ground-to-ground incidents, according to US government figures.

These accidents, as well as the bombing of a Canadian infantry unit by a US Air National Guard F-16 in April 2002 in Afghanistan, have led officials to highlight the blue-force tracking capabilities of FBCB2.

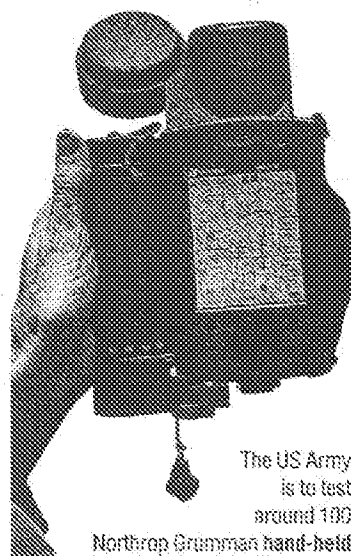
Col Dennis Rogers, who commands a brigade in the 4th ID, said the system "allows me to see the enemy, see the terrain and see myself". The combination with other 'digitised' systems in the 4th ID like the M1A2 Abrams System Enhancement Program tanks and M2A3 Bradley Fighting Vehicles extends the size of a division's operational area from about 30-50km to 60-100km, Col Rogers said.

Units outside the 4th ID will not have access to the Tactical Internet, which involves the use of Single-Channel Ground and Airborne Radio System and Enhanced Position Location Reporting System line-of-sight radios. This capability, which provides wireless communications on the move, is making its debut in battlefield operations with the 4th ID.

Instead, other units will be given systems that use a satellite link, enabling communications at greater range and in complex terrain where line-of-sight communications are not possible, officials said. Commanders down to the company level will be provided with the systems, instead of equipping every platform as in the 4th ID.

The capability is similar to that which the army gave to units on NATO-led peace support operations in the Balkans. In recent months forces in the Persian Gulf region and Afghanistan for Operation 'Enduring Freedom' have also received satellite-linked FBCB2 systems, officials said.

Other systems aimed at generating 'situational awareness' and



The US Army is to test around 100 Northrop Grumman hand-held FBCB2 systems in July

Northrop Grumman: G31833

identification of friendly forces are also being rapidly distributed to coalition and allied forces, an army spokeswoman said. These include combat identification thermal panels for vehicles, the Phoenix infra-red combat beacon system and glow tapes for soldiers.

Department of Defense acquisition officials have not yet given the final approval for the FBCB2 and thus it is still considered a developmental system. An initial operational test and evaluation was postponed from late 2002 as work still needed to take place with other communications systems that are to interface with FBCB2, officials said. Data may be collected during operations to evaluate the system, officials said.

The army is moving forward in studying a hand-held version of FBCB2, with a screen based on a personal digital assistant. The system operates via L-band satellite communications instead of the radio-based Tactical Internet. About 100 systems will be delivered in July for testing.

Northrop Grumman is developing an even smaller version that would connect directly with the network, providing a capability for soldiers to leave their vehicles but still have access to FBCB2 data.

Staff  
Editor Clifford Reid  
News Editor Ian Kemp  
Deputy News Editor Robin Threlton  
Land Forces Editor Christopher F. Foss  
Aviation Editor Craig Hoyle  
Naval Editor Richard Smith  
Features Editor Melinda Smith  
Business Editor David Mulholland  
Reporter Darrin Latta  
Washington DC Bureau

Bureau Chief Andrew Koch  
Reporters Michael Sisk, Kim Burger  
Asia Pacific Editor Robert Kanich  
Middle East Editor Brian Hughes

Senior Production Editor Kevin Goshell  
Chief Sub Editor Tim Peters  
Senior Sub Editor Steve Kurrell  
Sub Editors Chris Evenden, Karen Deane  
Group Technical Editor Robert Farrelly  
Aerospace Consultant Nick Cook  
Administrative Assistant Marian Chiles  
Production Controller Melanie Gale

Publisher Sean Howe  
Group Managing Director Alfred Robinson

Correspondents  
The Americas  
Martin Chuzzle, Scott Gaudy, Jose Higgins  
Sharon Johnson, Pedro Pablo Hernandez  
Cesar Oro, Tereza

Asia/Pacific  
Iqbal Akbar, Anna Bell, Ian Easton  
Yi-Chang Chang, Anthony Davis  
John Fawcett, Shih-Jie Hsieh  
Robert Keith, Peter Mendenhall  
Philip Newman, Avela Cristina Aguiar

Europe  
Hans A. Weidmann, John Burg  
New Brunswick, Philip S. Davis  
Thomas Galt, Jürgen Eise, Tim Morgan  
Gregory Holcomb, David Igo  
Jim Karamak, Elisabeth Konradbauer  
Zoran Krsovic, J.A. O'Leary, Gergely Mark  
Mikola Novakovic, Tim Roney  
Lise Stalder, Philip Smith, Catherine  
Brine Morris, Sarah Hale, Tony  
Frederic Holmes, Paul Valpoum

Middle East/Africa  
Gavin Anderson, Andrew Stanton  
Tom Doyle, Howard Foster, Herman  
Eck, Lacey, Ian Porter

NATO and EU affairs: Tony Hall  
UK: Tim Oram

# PATENT

I hereby certify that this correspondence is, on the date shown below, being filed with the U.S. Patent and Trademark Office via EFS.

Date: 17 July 2008

/Lisa L Pringle/  
Signature  
Lisa L. Pringle  
(type or print name of person certifying)

## **IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant : Henry Frank Gasbarro et al.  
Serial No. : 10/634,535  
Filing Date : August 5, 2003  
For : PERSONAL DIGITAL ASSISTANT  
: HAVING SATELLITE  
: COMMUNICATIONS CAPABILITY  
Group Art Unit : 7971  
Examiner : Brian J. Broadhead  
Attorney Docket No. : NG(MS)6619  
Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

## **DECLARATION UNDER 37 CFR §1.131**

I, Joseph E. Carpenter, a named inventor in the subject patent application, in accordance with 37 CFR §1.131, hereby declare that:

1. I, along with my co-inventors, Robert R. Berry and Henry Frank Gasbarro, conceived and completed a prototype of our claimed invention in this country before February 13, 2003, which is the earliest available priority date of U.S. Published Application U.S. 2004/0165369.
2. The claimed invention is a communications module that is operative to interface with a handheld computing device such that a given module can be connected to the handheld computing device and removed from the handheld computing device without substantial invasion of the handheld computing device. As defined in pending claims 1-6 of this application, the communications module includes a global positioning system that determines the location of the module relative to a standard set of coordinates, an L-band transceiver that broadcasts the determined location at a frequency directly to a satellite relay and receives location data for at least one other communications module, and an electrically conductive enclosure that substantially encompasses the L-band transceiver that facilitates the dissipation of heat produced by the L-band transceiver and shields the L-band transceiver from electromagnetic interference..
3. Exhibit A is a first illustration of the claimed communications module coupled with a personal digital assistant dated prior February 13, 2003.

4. Exhibit B is a schematic drawing of the input/output board used to provide connectivity between the personal digital assistant and the L-band transmitter (Enhanced Chipset with GPS) made on a date prior to February 13, 2003.
5. Exhibit C is an article including a photograph of one implementation of the claimed invention in operation dated March 12, 2003. The article was submitted for publication prior to the March 12, 2003 publication date, and the device photographed in the article was constructed in this country prior to February 13, 2003.
6. The communications module illustrated in Exhibit C was tested in this country and determined to be operational prior to February 13, 2003.
7. I hereby declare that the communications module illustrated in Exhibits A and C comprised an operative embodiment of the invention defined in the pending claims 1-6 of the present patent application.
8. I further declare that all statements made herein of our my knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both,

under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

15 July 2008  
Date

Joseph E. Carpenter  
Joseph E. Carpenter